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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/700,236  | 11/03/2003  | Young Wuk Kwon       |                     | 3762             |
| 7590  | 05/25/2005  |                      | EXAMINER            |                  |
| Young Wuk Kwon<br>Apartment A<br>3008 West Sunset Drive<br>Carbondale, IL 62901 |             |                      | ELLINGTON, ALANDRA  |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2855                |                  |
| DATE MAILED: 05/25/2005   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

|                              |                               |                  |
|------------------------------|-------------------------------|------------------|
| <b>Office Action Summary</b> | Application No.               | Applicant(s)     |
|                              | 10/700,236                    | KWON, YOUNG WUK  |
|                              | Examiner<br>Alandra Ellington | Art Unit<br>2855 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on amendment dated 1/8/05.
- 2a) This action is FINAL.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 2,4-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 5,6,9-18 and 20 is/are allowed.
- 6) Claim(s) 2,4,7,8,21 and 22 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 January 2005 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

|  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## Final Rejection

### ***Claim Rejections - 35 USC § 112***

#### **35 U.S.C 112 1<sup>st</sup> Paragraph**

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- a. With respect to Claim 7, the Applicant originally claimed at least two ligaments of the same length and the same shape with different elastic moduli. The newly amended claim states ligaments being uniformly cast and composed of different materials with different elastic moduli. The new subject matter of *ligaments being composed of different materials with different elastic moduli* is not supported by the specification, therefore, the Examiner does not feel that the material of the original claim "by itself" supports the subject matter of the amended claim.

#### **35 U.S.C. 112 2<sup>nd</sup> Paragraph**

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted step is *step h*. The last line of claim 21 ends with step *g*. *repeating steps a through h for differing values of stress loading*. The entire method is incomplete due to the omission of method step *h*.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Creagar (5,425,274) in view of Perez (5,528,151).

- a. With respect to Claim 2, Creagar discloses an apparatus for measuring the fatigue life of a structural member of known composition, the apparatus comprising a flat test coupon 1,2 uniformly cast and comprised of material mountable on said structural member (col. 3 lines 37-40), the test coupon 1,2 having at least two cut-out portions 5a-7a of different area which define at least

two parallel ligaments 5-7 of different lengths (col. 3 lines 40-47 {Fig. 1}), and the ligaments 5-7 having a shape so as to effect failure due to fatigue of the ligaments 5-7 at lower percentages of fatigue life of the structural member and prior to failure of the structural member due to fatigue when the ligament 5-7 and the structural member are subjected to substantially similar stress conditions and history (col. 3 lines 48-53). However, Creagar does not specifically teach a test coupon and structural member being composed of different materials. Perez teaches a test coupon 12 composed of a material other than that composing a structural member 14 (col. 2 lines 40-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Creagar with the teachings of Perez to include a test coupon composed of a material other than that composing a structural member for the purpose of creating fatigue stresses and predicting fatigue due to thermal cycling (see Perez, col. 1 lines 8-12,27-40).

b. With respect to Claim 4, Perez teaches rectangular cut-out portions having rounded corners described by ninety degree arcs joining any two adjacent sides such that the ligaments are all of equal length and width (col. 2 lines 57-67, col. 3 lines 1015 {Figs. 1,2}).

***Allowable Subject Matter***

8. Claims 5, 6, 9-18 and 20 are allowed.
9. The following is an examiner's statement of reasons for allowance: The reasons for allowance are based on the inclusion of:

- a. In Claim 5, the cut-out portions defining the ligaments having a shape described by at least two centrally aligned adjoining rectangles of different surface area, the centrally aligned adjoining rectangles having rounded corners described by ninety degree arcs joining any two adjacent sides and positioned so that the centrally aligned adjoining rectangles become progressively smaller in surface area.
- b. In Claim 9, groupings arranged such that parallel ligaments in any grouping will not be parallel to parallel ligaments in any other grouping in the test coupon.
- c. In Claim 17, the method step of subjecting the test coupon to repetitive stress loading of a constant displacement until all of the ligaments fail.

***Response to Arguments***

10. Applicant's arguments with respect to claims 2, 4-18 and 20-22 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

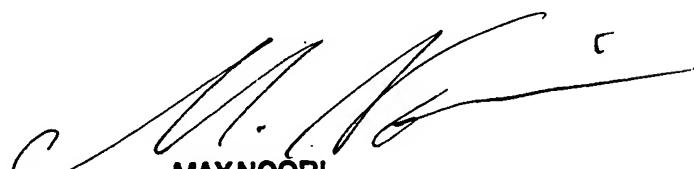
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alandra Ellington whose telephone number is (571) 272-2178. The examiner can normally be reached on Monday - Friday, 7:30am - 4:00pm.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alandra Ellington  
Art Unit 2855

ane



MAX NOORI  
PRIMARY EXAMINER

Approved by Examiner  
4/4/05

Replacement Sheet

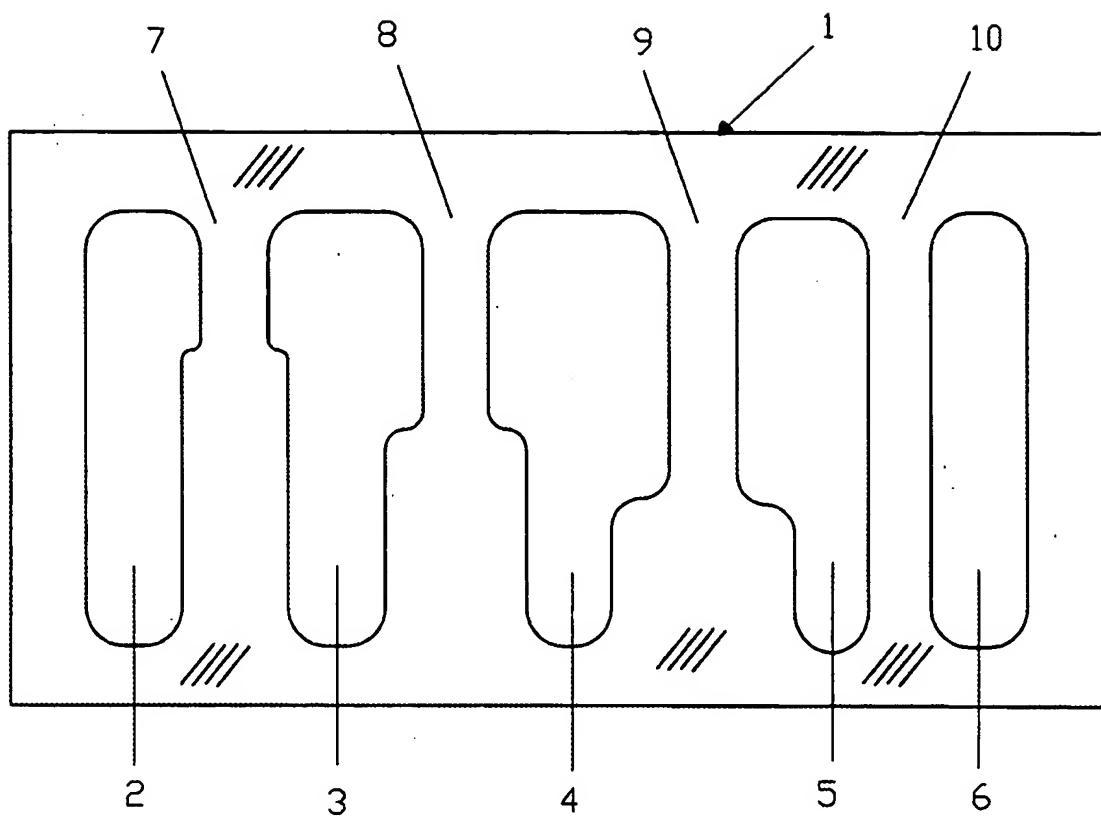


FIG. 1

Replacement Sheet

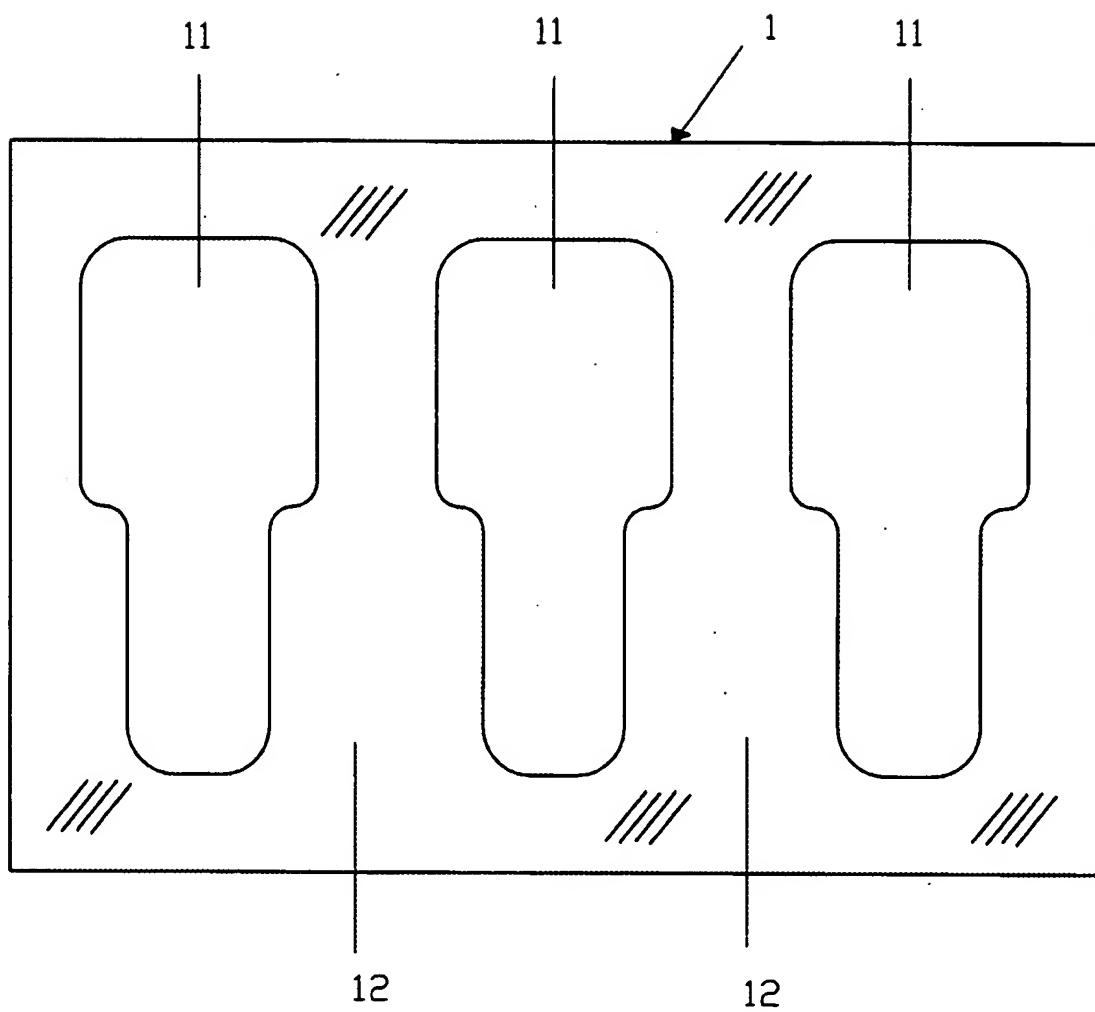


FIG. 2

Replacement Sheet

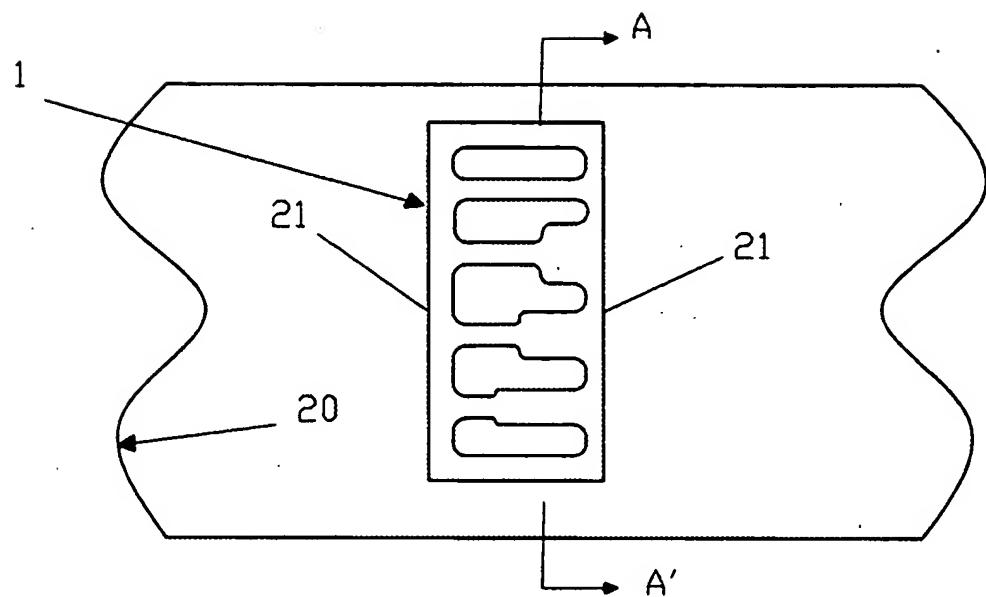


FIG. 3(a) Plane View

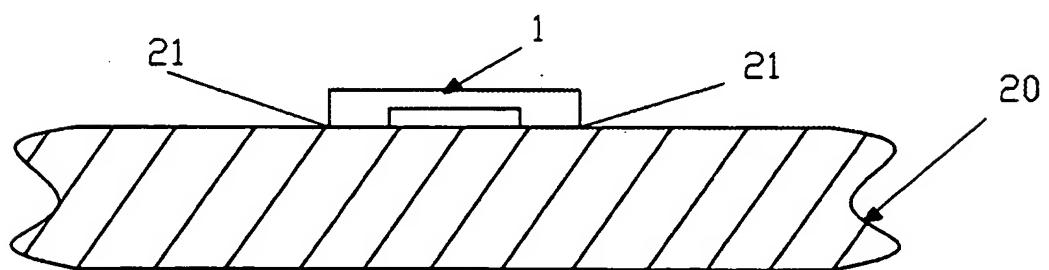


FIG. 3(b) Sectional View

Replacement Sheet

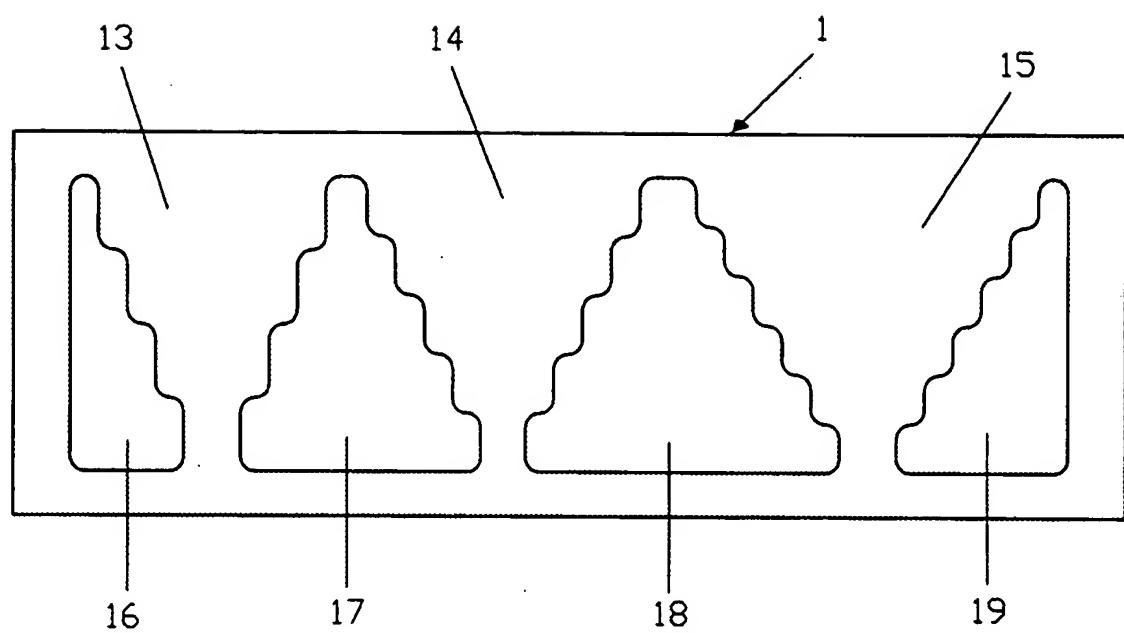


FIG. 4

Replacement Sheet

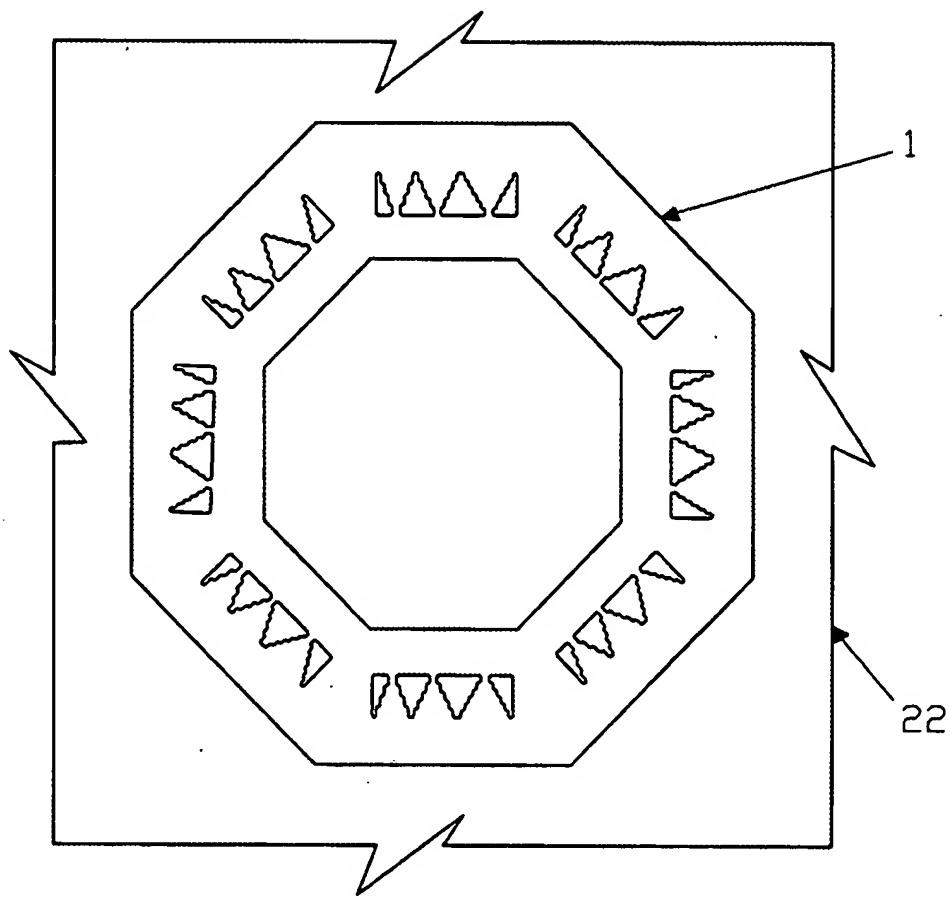


FIG. 5

Replacement Sheet

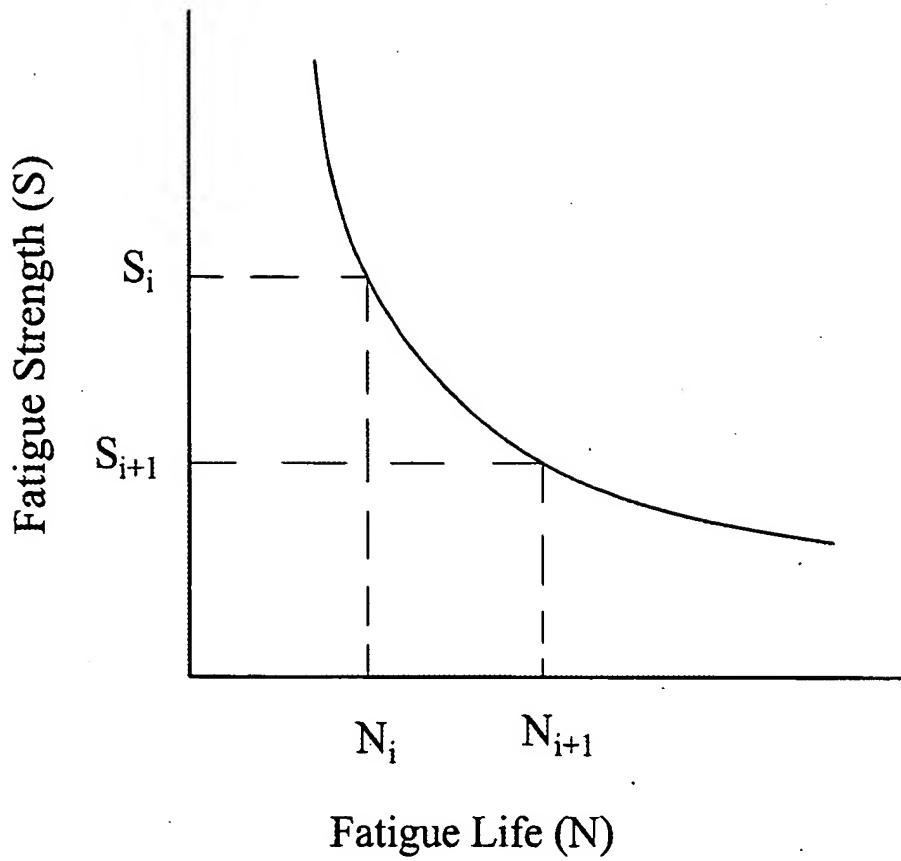


FIG. 6